

HydroBloc®Si-742-K aqua

Reactive silane concentrate, dilutable with water.

For the hydrophobicity of building materials according to ZTV-SIB 90

HydroBloc®Si-742-K aqua is a highly effective, reactive silane compound. When diluted with water, HydroBloc®Si-742-K aqua makes absorbent, mineral building materials permanently water-repellent (hydrophobic). Capillary water transport in the pores of building materials is practically completely prevented by impregnation with HydroBloc®Si-742-K aqua.

Important : HydroBloc®Si-742-K aqua binds in parallel to the drying process through chemical reactions. During these reactions it is anchored inseparably to the surface of the building material. The setting process is triggered by cross-linking agents contained in the product. The product contains beside a small amount of alcohol no organic solvents. HydroBloc®Si-742-K aqua is environmentally friendly and easy to process.

HydroBloc®Si-742-K aqua fully complies with the technical requirements of ZTV SIB-90* and WTA** guidelines for hydrophobing agents!

*Deutschland **) WTA = Wissenschaftlich-Technischer Arbeitskreis für Denkmalpflege

Professional hydrophobising through pressure-less flow coating until saturation of the building material



HydroBloc®Si-742-K aqua does not form films and does not hinder water vapour diffusion out of the building material. The product is supplied as a concentrate, is diluted with tap water before application and is easy to use. In order to ensure the necessary, even impregnation of the building material surface, it is advisable to apply the product to the substrate by flooding or pressure less, saturated spraying.

Function On contact with the building material and the air, the active ingredient of HydroBloc®Si-742-K *aqua* - chemically an oligomeric alkylalkoxysilane - condenses rapidly with molecular enlargement to form the strongly water-repellent (hydrophobic) polysiloxane, an organic compound of silicic acid SiO₂.

As an intermediate product, highly reactive silanols with a high affinity to the silicates in the building material are created. The impregnating agent is fixed to the building material via hydrogen bonds between the silanols and silicates.

These reactions take place comparatively quickly, so that the applied product is usually fully effective immediately after the water has evaporated.

Effect Treatment with HydroBloc®Si-742-K *aqua* greatly reduces the natural water absorption of absorbent, mineral building materials and efficiently prevents, for example, the usual moisture penetration of the surface in driving rain. Building damage caused by water and air pollutants dissolved in water, efflorescence caused by water-soluble salts, vegetation (moss, algae) and similar phenomena prevent impregnation.



The reduced water absorption reduces the thermal conductivity of the materials and increases the thermal insulation. A hydrophobic treatment with HydroBloc®Si-742-K *aqua* therefore also saves expensive energy in the long term.

Dirt caused by capillary stored dust is significantly reduced, the breathability of the building material is not impaired and the original optical effect of the treated building remains unchanged.

HydroBloc®Si-742-K *aqua* is explicitly intended for the water-repellent (hydrophobic) treatment of absorbent mineral substrates. The product is not suitable for sealing surfaces against pressing or standing water. However, it is successfully used as an injecting agent for the production of horizontal barriers.

Processing HydroBloc®Si-742-K *aqua* is particularly suitable for the water-repellent treatment of concrete, sand-lime brick, brick masonry, gas concrete and absorbent natural stone.

On less absorbent surfaces (crystalline rocks, hard fired clinkers, etc.), care must be taken to rub off excess material - which has not been absorbed by the surface - before it dries. Otherwise the excess of active substance will lead to a kind of film formation on the stone surface. We therefore recommend that test surfaces are always applied to critical substrates.

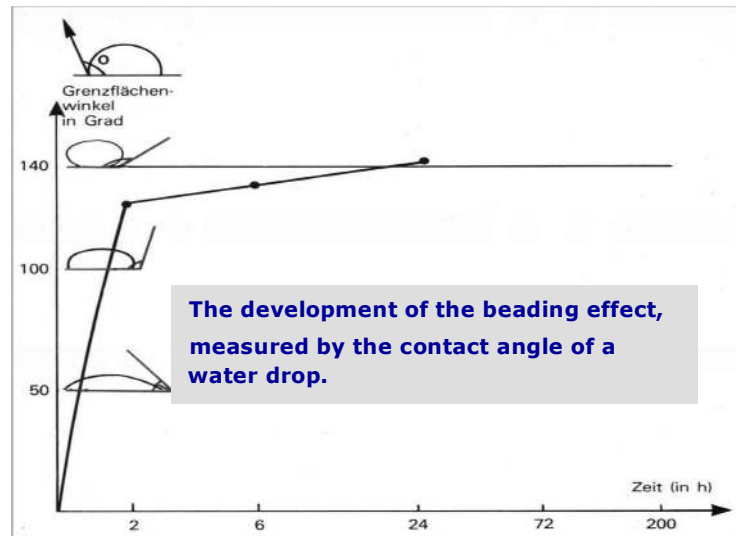
The surfaces must be clean, free of dust, loose and friable components and dry. After cleaning surfaces with high pressure equipment or a sharp water jet, HydroBloc®Si-742-K *aqua* should not be applied immediately after cleaning. In such cases we recommend impregnation after 24 - 48 hours waiting time.

Impregnating agents should always be applied generously, by flooding, pressureless spraying or pouring, not by brushing and never by rollers. Always apply enough material to allow a 30 - 50 cm long liquid plume to run off on the surface of the building material. This is the only way to ensure that the building material is sufficiently soaked with the impregnation agent.

The consumption depends on the sucking capacity of the building material and the roughness of the surface. According to the material the consumption varies between 0,2 - 1,5 Litre /m². (ready to use, diluted material) The precise consumption must be developed by object testing.

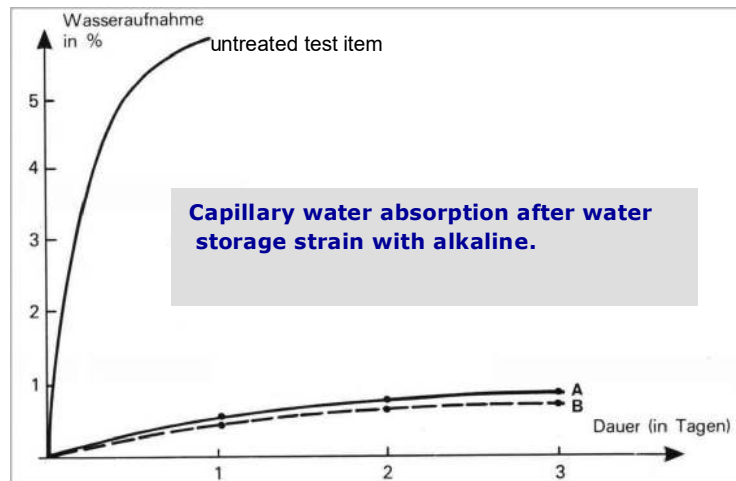
With 200 gr/m² material HydroBloc®Si-742-K aqua impregnated floor plate. Calibrated water drops were placed in regular distance on top of the treated floor. The developed contact angle was measured

Less than 2 hours after application the contact angle was > 120° - the repellent effect appears quick.



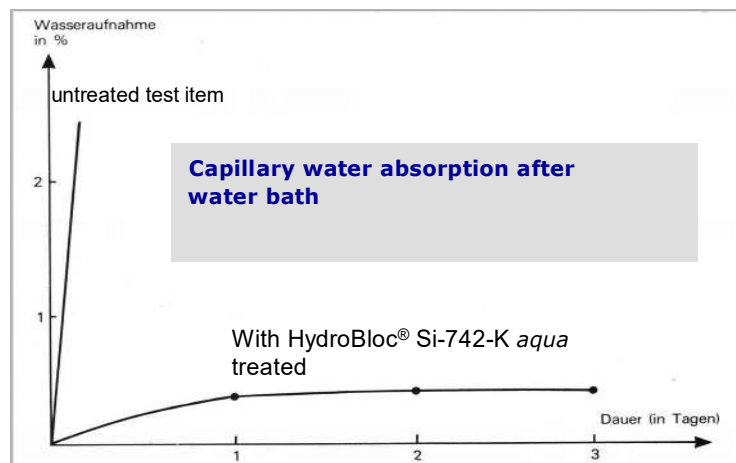
Test item made of cement mortar, impregnated with 400 gr/m² HydroBloc®Si-742-K aqua was stored under water and the water absorption was measured (δ Curve A)

After that 7 days stored in saturated lime milk (ph13). After that 3 month by 20° - 50° rel. humidity dried and after that stored again in water (δ Curve B)



A brick impregnated with 400 gr/m² HydroBloc®Si-742-K aqua-stored in water 1 cm deep, water absorption through capillary sucking measured after 3 days.

The water absorption is compared with the zero test item extremely low.



HydroBloc®Si-742-K *aqua* is supplied as a concentrate and diluted with tap water for processing. The degree of dilution depends on the absorbency of the substrate. With highly absorbent substrates (e.g. sand-lime brick, aerated concrete), higher dilution ratios are suitable because the material sucks up more ready to use HydroBloc®Si-742-K *aqua*. The dilution ratio, for slightly absorbent natural stone or brick masonry, is lower because the material doesn't suck a big amount of HydroBloc®SI-742-K *aqua*. Preliminary tests are useful and recommended.

Adjacent components must be protected from contamination with HydroBloc®Si-742-K *aqua* by suitable measures (masking, covering). When fresh, HydroBloc®Si-742-K *aqua* can be easily removed by simply washing it off with water to which a commercial detergent has been added. Reacted product, on the other hand, can hardly be removed!

Properties

Name	: HydroBloc Si-742-K <i>aqua</i>
Chemical Characteristic	: Alkylalkoxysilane, diluted in water
Delivered product	: Concentrate
Diluent	: Clean tap water
Degree of dilution	: 1:5 - 1:7 depending on the building material
Processing time	: Not applicable
Density	: Approx. 1,00 gr/ml (20°C)
Viscosity	: 1 cps (similar to water)
Colour and appearance	: Transparent liquid, colourless or yellowish
Odour	: Very faint, alcohol-like

Safety Storage

Protect HydroBloc®Si-742-K *aqua* from frost and do not store above 30°C. HydroBloc® Si-742 *aqua* doesn't contain any toxic contents. We recommend protective gloves and glasses meanwhile processing. Additionally we recommend a eyewash bottle with water in case of emergency.

The product is sensitive to frost and should not be stored at temperatures >30°. In the original containers and tightly closed, HydroBloc®Si-742-K *aqua* can be stored for at least 12 months after delivery. Diluted product should be used within a maximum of 5 days, opened containers should be used within 4 weeks and must be tightly resealed immediately after removal of partial quantities. Water is sufficient for cleaning equipment and machines.

Keep away from children and unauthorised persons. Material which is stored in other than the original cans must be sufficient labelled.

These technical information describe the present-day state of knowledge these product. They should only inform about the possibilities of application and could not release the applicator of his commitment to check the possibility to use the product for the required application. Information for processing can be found in processing instructions of our product. Information about safe handling can be found in our current safety data sheet.

ATI-HydroBloc®Si-742-K *aqua* |01|2020
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ARCAN Waterproof

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passion to invent 